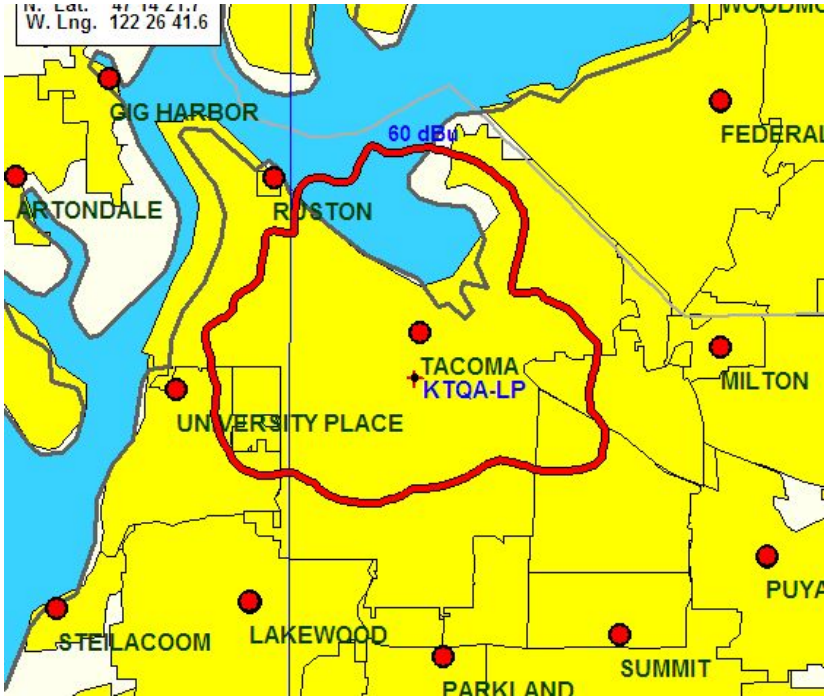
FAB 5
KTQA-LP 95.3 FM Tacoma, Washington
Fac ID 196485

MINOR CHANGE OF LICENSED STATION

Channel	237
New Location:	47°14'12.1"N 122°26'46.1"W -- NAD 83
	47° 14'21.7”N,122° 26' 41.6" -- NAD 27
Relocation:	2.4 km
Antenna AGL	30 m
Antenna Ground	107 m
Antenna COR	137 m
HAAT	68.7 m
Power	18 w



FCC F(50,50) 60 dBu

Spacing

Fab-5

REFERENCE — DISPLAY DATES
47 14 21.7 N. — CLASS = L1 Int = L1 — DATA 12-29-17
122 26 41.6 W. — Current Spacings to 2nd Adj. — SEARCH 01-15-18

---------- Channel 237 - 95.3 MHz ----------

Call		Channel		Location		Azi	Dist	FCC	Margin
*KJR-FM	LIC-N	239C		Seattle	WA	36.7	42.43	92.5	-50.1
*KUOW-FM	LIC	235C1		Seattle	WA	13.8	43.14	72.5	-29.4
KTQA-LP	LIC	237L1		Tacoma	WA	322.2	2.20	23.5	-21.3
**K263BJ	CP -D	237D		Kent	WA	48.7	26.67	31.5	-4.8
K237FR	LIC	237D		Tumwater	WA	235.3	43.55	31.5	12.1
KXLE-FM	LIC	237C1		Ellensburg	WA	93.3	125.42	110.5	14.9
KDXB-LP	LIC	237L1		Seattle	WA	12.7	42.39	23.5	18.9
KITI-FM	LIC-N	236A		Winlock	WA	209.6	88.83	55.5	33.3
KXXK	LIC	237A		Hoquiam	WA	251.2	103.71	66.5	37.2
K237GN	LIC-D	237D		Everett	WA	10.8	78.17	38.5	39.7
KXXK	RSV-A	237C3		Hoquiam	WA	257.1	120.90	77.5	43.4

Reference station has protected zone issue: Canada- AM tower
RSV-R = reserved - needs protection, RSV-A = allocation.
All separation margins include rounding
*See second adjacent waiver request
**KTQA-LP Grandfathered at minimum distance 19.5 km from K263BJ (Req 31.5 km, Margin -12.0 km) via BNPL-20131114BCZ; proposed is at distance 26.67. 26.67 > 19.5). K263BJ since has not modified/changed facility location.

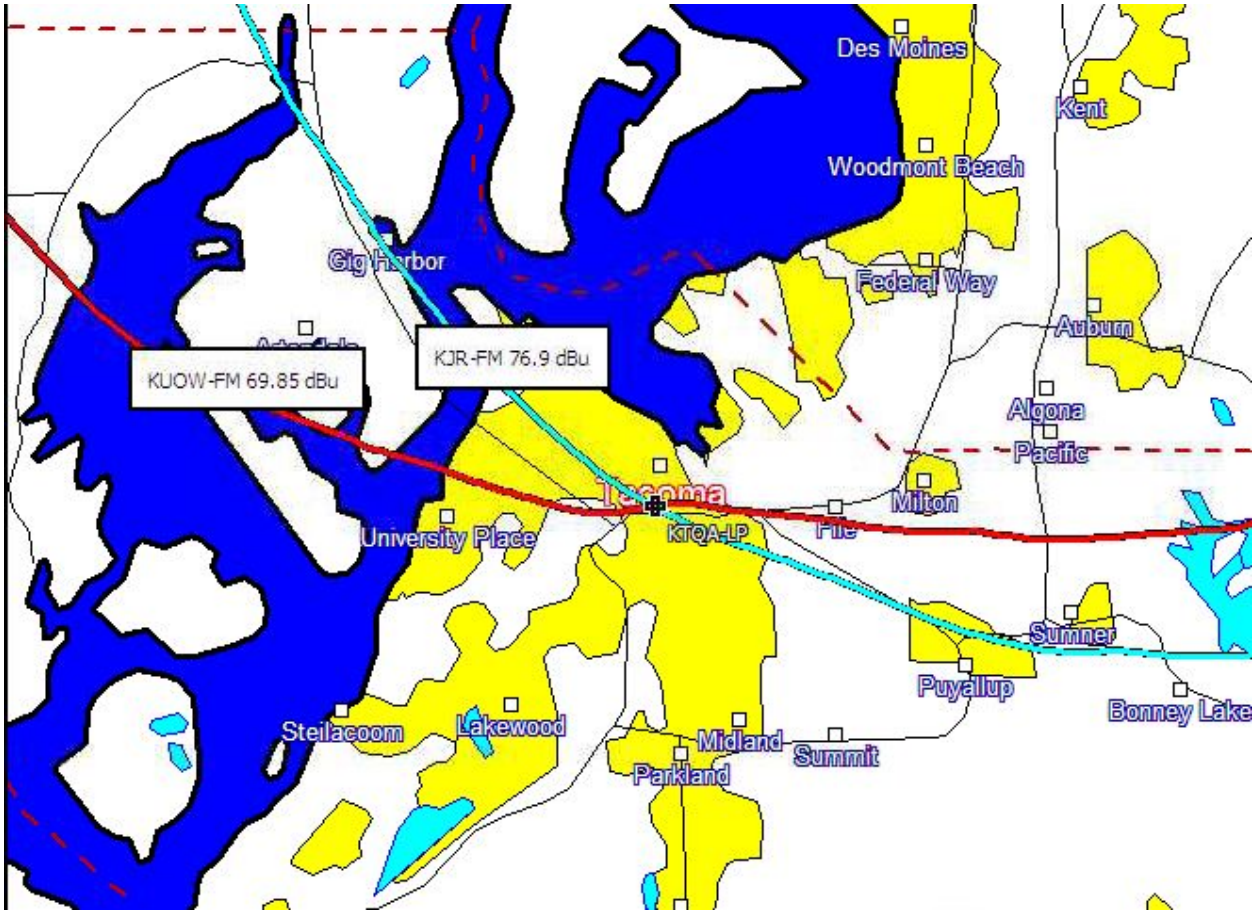
Towair (Pass)

DETERMINATION Results	
Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.	
Your Specifications	
NAD83 Coordinates	
Latitude	47-14-12.1 north
Longitude	122-26-46.1 west
Measurements (Meters)	
Overall Structure Height (AGL)	29
Support Structure Height (AGL)	0
Site Elevation (AMSL)	107
Structure Type	
GTOWER - Guyed Structure Used for Communication Purposes	

Second Adjacent Waiver Request

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by used Free Space methodology of calculation.

Using U/D methodology, at the proposed KTQA-LP transmitter location KUOW has a signal strength of 69.9 dBu and KVLP has a signal strength of 76.9 dBu. Interference will occur when the lesser signal strength (KUPL) interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 109.9 dBu contour.



The distance to this contour, using free space method:
$D = (7.01*P^{1/2})/E$,
where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):
P = 19 w, E = 109.9 dBu D = 96.1 meters

However, the field strength of the proposed LPFM's antenna system falls quickly at depression angles below the horizon. Using elevation pattern data provided by Nicom (2 bay 0.5 spaced BKG77 antenna http://www.nicomusa.com/bkg77) for a 0.81 wave spaced antenna, the distance to the 109.9 dBu contour at various depression angles is tabulated below. The data shows that the lowest point at which the signal strength rises to 109.9 dBu is 27.4 meters below the center of radiation of the antenna system, or 2.6 meters above the ground. Therefore, this is sufficient clearance, and the interference area encompasses zero population. The table below show that the lowest elevation point of the 109.9 dBu F(50,10) interfering contour is 2.6 (>9 feet) meters above the ground.

Due to zero population within this radiation radius, this meets the "Living way" Criteria to qualify for a Waiver of 47 C.F.R. Section 73.807.

Thus, the applicant requests second adjacent waiver based upon evidence no interference is proposed.

A MAX ERP
B DEPRESSION ANGLE BELOW HORIZON
C RELATIVE FIELD
D dB FROM RELATIVE
E ERP
F ANGULAR DISTANCE TO 122.65 dBu CONTOUR
G VERTICAL DISTANCE (below antenna)
H HORIZONTAL DISTANCE TO 122.65 dBu CONTOUR
I CLEARANCE OF CONTOUR ABOVE GROUND

A	B	C	D	E	F	G	H	I
18	0	1	0.000	18.00	95.1	0	95.1	30
18	0.5	1	0.000	18.00	95.1	0.8	95	29.2
18	1	0.998	-0.017	17.93	94.9	1.6	94.8	28.4
18	1.5	0.997	-0.026	17.89	94.8	2.4	94.7	27.6
18	2	0.994	-0.052	17.78	94.5	3.2	94.4	26.8
18	2.5	0.991	-0.079	17.68	94.2	4.1	94.1	25.9
18	3	0.988	-0.105	17.57	93.9	4.9	93.7	25.1
18	3.5	0.984	-0.140	17.43	93.6	5.7	93.4	24.3
18	4	0.979	-0.184	17.25	93.1	6.4	92.8	23.6
18	4.5	0.973	-0.238	17.04	92.5	7.2	92.2	22.8
18	5	0.967	-0.291	16.83	91.9	8	91.5	22
18	5.5	0.96	-0.355	16.59	91.3	8.7	90.8	21.3
18	6	0.952	-0.427	16.31	90.5	9.4	90	20.6

18	6.5	0.944	-0.501	16.04	89.8	10.1	89.2	19.9
18	7	0.935	-0.584	15.74	88.9	10.8	88.2	19.2
18	7.5	0.926	-0.668	15.43	88	11.4	87.2	18.6
18	8	0.916	-0.762	15.10	87.1	12.1	86.2	17.9
18	8.5	0.905	-0.867	14.74	86	12.7	85	17.3
18	9	0.894	-0.973	14.39	85	13.2	83.9	16.8
18	9.5	0.883	-1.081	14.03	84	13.8	82.8	16.2
18	10	0.871	-1.200	13.66	82.8	14.3	81.5	15.7
18	10.5	0.857	-1.340	13.22	81.5	14.8	80.1	15.2
18	11	0.842	-1.494	12.76	80.1	15.2	78.6	14.8
18	11.5	0.827	-1.650	12.31	78.6	15.6	77	14.4
18	12	0.812	-1.809	11.87	77.2	16	75.5	14
18	12.5	0.796	-1.982	11.41	75.7	16.3	73.9	13.7
18	13	0.78	-2.158	10.95	74.2	16.6	72.3	13.4
18	13.5	0.763	-2.350	10.48	72.5	16.9	70.4	13.1
18	14	0.746	-2.545	10.02	70.9	17.1	68.7	12.9
18	14.5	0.729	-2.745	9.57	69.3	17.3	67	12.7
18	15	0.711	-2.963	9.10	67.6	17.4	65.2	12.6
18	15.5	0.693	-3.185	8.64	65.9	17.6	63.5	12.4
18	16	0.674	-3.427	8.18	64.1	17.6	61.6	12.4
18	16.5	0.656	-3.662	7.75	62.4	17.7	59.8	12.3
18	17	0.636	-3.931	7.28	60.5	17.6	57.8	12.4
18	17.5	0.617	-4.194	6.85	58.7	17.6	55.9	12.4
18	18	0.598	-4.466	6.44	56.8	17.5	54	12.5
18	18.5	0.578	-4.761	6.01	54.9	17.4	52	12.6
18	19	0.558	-5.067	5.60	53	17.2	50.1	12.8
18	19.5	0.538	-5.384	5.21	51.1	17	48.1	13
18	20	0.518	-5.713	4.83	49.2	16.8	46.2	13.2
18	20.5	0.497	-6.073	4.45	47.2	16.5	44.2	13.5
18	21	0.476	-6.448	4.08	45.2	16.1	42.2	13.9
18	21.5	0.456	-6.821	3.74	43.3	15.8	40.2	14.2
18	22	0.435	-7.230	3.41	41.3	15.4	38.2	14.6
18	22.5	0.414	-7.660	3.09	39.3	15	36.3	15
18	23	0.393	-8.112	2.78	37.3	14.5	34.3	15.5
18	23.5	0.372	-8.589	2.49	35.3	14	32.3	16
18	24	0.352	-9.069	2.23	33.4	13.5	30.5	16.5
18	24.5	0.331	-9.603	1.97	31.4	13	28.5	17
18	25	0.31	-10.173	1.73	29.4	12.4	26.6	17.6
18	25.5	0.29	-10.752	1.51	27.5	11.8	24.8	18.2
18	26	0.269	-11.405	1.30	25.5	11.1	22.9	18.9
18	26.5	0.249	-12.076	1.12	23.6	10.5	21.1	19.5
18	27	0.229	-12.803	0.94	21.7	9.8	19.3	20.2
18	27.5	0.209	-13.597	0.79	19.8	9.1	17.5	20.9
18	28	0.189	-14.471	0.64	17.9	8.3	15.8	21.7
18	28.5	0.17	-15.391	0.52	16.1	7.6	14.1	22.4

18	29	0.15	-16.478	0.41	14.2	6.8	12.4	23.2
18	29.5	0.131	-17.655	0.31	12.4	6.1	10.7	23.9
18	30	0.112	-19.016	0.23	10.6	5.2	9.1	24.8
18	30.5	0.093	-20.630	0.16	8.8	4.4	7.5	25.6
18	31	0.075	-22.499	0.10	7.1	3.6	6	26.4
18	31.5	0.056	-25.036	0.06	5.3	2.7	4.5	27.3
18	32	0.038	-28.404	0.03	3.6	1.9	3	28.1
18	32.5	0.021	-33.556	0.01	1.9	1	1.6	29
18	33	0.003	-50.458	0.00	0.2	0.1	0.1	29.9
18	33.5	0.014	-37.077	0.00	1.3	0.7	1	29.3
18	34	0.03	-30.458	0.02	2.8	1.5	2.3	28.5
18	34.5	0.046	-26.745	0.04	4.3	2.4	3.5	27.6
18	35	0.062	-24.152	0.07	5.8	3.3	4.7	26.7
18	35.5	0.078	-22.158	0.11	7.4	4.2	6	25.8
18	36	0.093	-20.630	0.16	8.8	5.1	7.1	24.9
18	36.5	0.107	-19.412	0.21	10.1	6	8.1	24
18	37	0.121	-18.344	0.26	11.5	6.9	9.1	23.1
18	37.5	0.135	-17.393	0.33	12.8	7.7	10.1	22.3
18	38	0.149	-16.536	0.40	14.1	8.6	11.1	21.4
18	38.5	0.161	-15.863	0.47	15.3	9.5	11.9	20.5
18	39	0.174	-15.189	0.54	16.5	10.3	12.8	19.7
18	39.5	0.186	-14.610	0.62	17.6	11.1	13.5	18.9
18	40	0.198	-14.067	0.71	18.8	12	14.4	18
18	40.5	0.209	-13.597	0.79	19.8	12.8	15	17.2
18	41	0.219	-13.191	0.86	20.8	13.6	15.7	16.4
18	41.5	0.229	-12.803	0.94	21.7	14.3	16.2	15.7
18	42	0.239	-12.432	1.03	22.7	15.1	16.8	14.9
18	42.5	0.248	-12.111	1.11	23.5	15.8	17.3	14.2
18	43	0.257	-11.801	1.19	24.4	16.6	17.8	13.4
18	43.5	0.265	-11.535	1.26	25.2	17.3	18.2	12.7
18	44	0.273	-11.277	1.34	25.9	17.9	18.6	12.1
18	44.5	0.281	-11.026	1.42	26.7	18.7	19	11.3
18	45	0.288	-10.812	1.49	27.3	19.2	19.3	10.8
18	45.5	0.295	-10.604	1.57	28	19.9	19.6	10.1
18	46	0.301	-10.429	1.63	28.6	20.5	19.8	9.5
18	46.5	0.307	-10.257	1.70	29.2	21.1	20.1	8.9
18	47	0.312	-10.117	1.75	29.6	21.6	20.1	8.4
18	47.5	0.317	-9.979	1.81	30.1	22.1	20.3	7.9
18	48	0.321	-9.870	1.85	30.5	22.6	20.4	7.4
18	48.5	0.326	-9.736	1.91	31	23.2	20.5	6.8
18	49	0.329	-9.656	1.95	31.3	23.6	20.5	6.4
18	49.5	0.333	-9.551	2.00	31.6	24	20.5	6
18	50	0.336	-9.473	2.03	31.9	24.4	20.5	5.6
18	50.5	0.339	-9.396	2.07	32.2	24.8	20.4	5.2
18	51	0.341	-9.345	2.09	32.4	25.1	20.4	4.9

18	51.5	0.343	-9.294	2.12	32.6	25.5	20.3	4.5
18	52	0.345	-9.244	2.14	32.8	25.8	20.2	4.2
18	52.5	0.346	-9.218	2.15	32.9	26	20	4
18	53	0.347	-9.193	2.17	33	26.3	19.8	3.7
18	53.5	0.348	-9.168	2.18	33.1	26.5	19.7	3.5
17	54	0.349	-9.143	2.07	32.2	26	18.9	4
18	54.5	0.349	-9.143	2.19	33.2	27	19.2	3
18	55	0.349	-9.143	2.19	33.2	27.1	19	2.9
18	55.5	0.348	-9.168	2.18	33.1	27.2	18.7	2.8
18	56	0.347	-9.193	2.17	33	27.3	18.4	2.7
18	56.5	0.346	-9.218	2.15	32.9	27.4	18.1	2.6
18	57	0.345	-9.244	2.14	32.8	27.4	17.8	2.6
18	57.5	0.343	-9.294	2.12	32.6	27.4	17.5	2.6
18	58	0.341	-9.345	2.09	32.4	27.4	17.1	2.6
18	58.5	0.339	-9.396	2.07	32.2	27.4	16.8	2.6
18	59	0.336	-9.473	2.03	31.9	27.3	16.4	2.7
18	59.5	0.334	-9.525	2.01	31.7	27.3	16.1	2.7
18	60	0.331	-9.603	1.97	31.4	27.1	15.7	2.9
18	60.5	0.328	-9.683	1.94	31.2	27.1	15.3	2.9
18	61	0.325	-9.762	1.90	30.9	27	14.9	3
18	61.5	0.322	-9.843	1.87	30.6	26.8	14.6	3.2
18	62	0.319	-9.924	1.83	30.3	26.7	14.2	3.3
18	62.5	0.315	-10.034	1.79	29.9	26.5	13.8	3.5
18	63	0.311	-10.145	1.74	29.5	26.2	13.4	3.8
18	63.5	0.308	-10.229	1.71	29.3	26.2	13	3.8
18	64	0.304	-10.343	1.66	28.9	25.9	12.6	4.1
18	64.5	0.299	-10.487	1.61	28.4	25.6	12.2	4.4
18	65	0.295	-10.604	1.57	28	25.3	11.8	4.7
18	65.5	0.291	-10.722	1.52	27.6	25.1	11.4	4.9
18	66	0.286	-10.873	1.47	27.2	24.8	11	5.2
18	66.5	0.282	-10.995	1.43	26.8	24.5	10.7	5.5
18	67	0.277	-11.150	1.38	26.3	24.2	10.2	5.8
18	67.5	0.272	-11.309	1.33	25.8	23.8	9.8	6.2
18	68	0.267	-11.470	1.28	25.4	23.5	9.5	6.5
18	68.5	0.262	-11.634	1.24	24.9	23.1	9.1	6.9
18	69	0.257	-11.801	1.19	24.4	22.7	8.7	7.3
18	69.5	0.251	-12.007	1.13	23.8	22.2	8.3	7.8
18	70	0.246	-12.181	1.09	23.4	21.9	8	8.1
18	70.5	0.241	-12.360	1.05	22.9	21.5	7.6	8.5
18	71	0.237	-12.505	1.01	22.5	21.2	7.3	8.8
18	71.5	0.232	-12.690	0.97	22	20.8	6.9	9.2
18	72	0.227	-12.879	0.93	21.5	20.4	6.6	9.6
18	72.5	0.222	-13.073	0.89	21.1	20.1	6.3	9.9
18	73	0.217	-13.271	0.85	20.6	19.6	6	10.4
18	73.5	0.212	-13.473	0.81	20.1	19.2	5.7	10.8

18	74	0.207	-13.681	0.77	19.6	18.8	5.4	11.2
18	74.5	0.202	-13.893	0.73	19.2	18.4	5.1	11.6
18	75	0.197	-14.111	0.70	18.7	18	4.8	12
18	75.5	0.193	-14.289	0.67	18.3	17.7	4.5	12.3
18	76	0.188	-14.517	0.64	17.8	17.2	4.3	12.8
18	76.5	0.184	-14.704	0.61	17.5	17	4	13
18	77	0.179	-14.943	0.58	17	16.5	3.8	13.5
18	77.5	0.174	-15.189	0.54	16.5	16.1	3.5	13.9
18	78	0.17	-15.391	0.52	16.1	15.7	3.3	14.3
18	78.5	0.165	-15.650	0.49	15.6	15.2	3.1	14.8
18	79	0.16	-15.918	0.46	15.2	14.9	2.9	15.1
18	79.5	0.156	-16.138	0.44	14.8	14.5	2.7	15.5
18	80	0.151	-16.420	0.41	14.3	14	2.4	16
18	80.5	0.148	-16.595	0.39	14	13.8	2.3	16.2
18	81	0.145	-16.773	0.38	13.7	13.5	2.1	16.5
18	81.5	0.143	-16.893	0.37	13.6	13.4	2	16.6
18	82	0.14	-17.077	0.35	13.3	13.1	1.8	16.9
18	82.5	0.137	-17.266	0.34	13	12.8	1.7	17.2
18	83	0.134	-17.458	0.32	12.7	12.6	1.5	17.4
18	83.5	0.131	-17.655	0.31	12.4	12.3	1.4	17.7
18	84	0.128	-17.856	0.29	12.1	12	1.2	18
18	84.5	0.125	-18.062	0.28	11.8	11.7	1.1	18.3
18	85	0.122	-18.273	0.27	11.6	11.5	1	18.5
18	85.5	0.122	-18.273	0.27	11.6	11.5	0.9	18.5
18	86	0.121	-18.344	0.26	11.5	11.4	0.8	18.6
18	86.5	0.121	-18.344	0.26	11.5	11.4	0.7	18.6
18	87	0.12	-18.416	0.26	11.4	11.3	0.6	18.7
18	87.5	0.119	-18.489	0.25	11.3	11.2	0.5	18.8
18	88	0.119	-18.489	0.25	11.3	11.2	0.4	18.8
18	88.5	0.118	-18.562	0.25	11.2	11.1	0.3	18.9
18	89	0.117	-18.636	0.25	11.1	11	0.2	19
18	89.5	0.117	-18.636	0.25	11.1	11	0.1	19